

A MULTI-POINT SAMPLING METHOD FOR OBTAINING ISOKINETIC FLUID COMPOSITION FLOWS IN A NON-UNIFORM VELOCITY FLOW FIELD

Abstract

A method and system of obtaining a spatially representative sample of fluid flowing through a duct comprises providing a sample probe having a plurality of inlet ports in the duct, controlling a back pressure within the sample probe so that the back pressure within the sample probe at each inlet port is the same, and receiving a sample portion of the fluid into the plurality of inlet ports. The back pressure may be equal to a static pressure of an outlet portion of the duct. The back pressure may be controlled by venting the sample probe to atmosphere, using a pressure regulator connected to the sample probe or venting to an opening in a wall of an outlet portion of the duct. A cross sectional area of the sample probe may be at least ten times larger than a sum of respective cross sectional areas of the inlet ports.